

DEP Stakeholder Meeting #2

November 29, 2016

Presentation Detail

- Summary and Review of Questions from Sept 22 Meeting
- Information on Parking Freeze Methodology
 - Review of the Problem
 - Information on Massport's HOV strategies
 - Analysis Approach Including Parking Conditions
 - Detail On:
 - Origin Area
 - Vehicle Miles Traveled (VMT)
 - Vehicle Occupancy Rate (VOR)
 - Average number of vehicle trips, by mode
 - Resulting Impact
- Massport's projections for future capacity needs
 - Information on 5,000 spaces

SUMMARY AND REVIEW OF QUESTIONS

Stakeholder Feedback and Questions

1) Information on the 2013 Air Passenger Survey

Answer: The website link below was provided via email (Beth Card) on October 17

2013 Survey link: <https://www.massport.com/environment/environmental-reporting/air-passenger-survey/>

Additional information on the survey is also included in today's presentation

2) Information on scope of diverting cars to satellite locations on Logan property (valet parking)

Answer: Information on parking numbers was included in the October 17 email

3) Information on the ridership for Logan Express buses by site

Answer: Information on ridership was included in the October 17 email

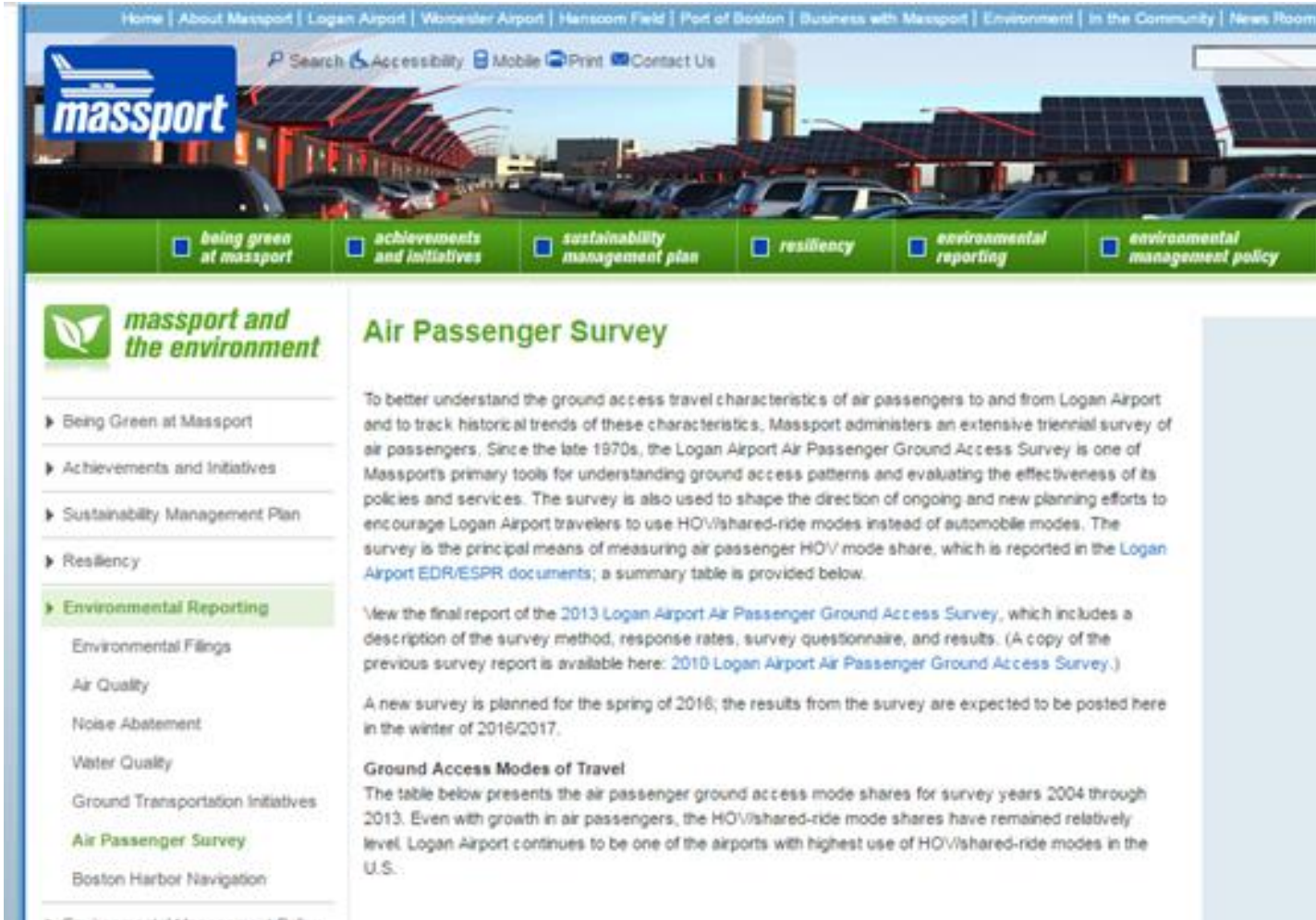
4) Request that more information be given on the methodology of Massport's technical paper submitted to DEP

Answer: This request is the focus of the presentation

5) Request that more information be given on why Massport is requesting 5,000 spaces

Answer: This request is the focus of the presentation

1) Information on the 2013 Air Passenger Survey



The screenshot shows the Massport website's "Air Passenger Survey" page. The header includes navigation links (Home, About Massport, Logan Airport, Worcester Airport, Hanscom Field, Port of Boston, Business with Massport, Environment, In the Community, News Room) and utility links (Search, Accessibility, Mobile, Print, Contact Us). A green navigation bar lists categories: being green at massport, achievements and initiatives, sustainability management plan, resiliency, environmental reporting, and environmental management policy. The left sidebar, titled "massport and the environment", lists various environmental topics, with "Air Passenger Survey" highlighted. The main content area features the "Air Passenger Survey" title, a paragraph about the survey's purpose and history, a link to the 2013 report, and a section titled "Ground Access Modes of Travel" with a table of mode shares for 2004-2013.

Home | About Massport | Logan Airport | Worcester Airport | Hanscom Field | Port of Boston | Business with Massport | Environment | In the Community | News Room

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massport

being green at massport achievements and initiatives sustainability management plan resiliency environmental reporting environmental management policy

massport and the environment

- ▶ Being Green at Massport
- ▶ Achievements and Initiatives
- ▶ Sustainability Management Plan
- ▶ Resiliency
- ▶ **Environmental Reporting**
 - Environmental Filings
 - Air Quality
 - Noise Abatement
 - Water Quality
 - Ground Transportation Initiatives
 - Air Passenger Survey**
 - Boston Harbor Navigation

Air Passenger Survey

To better understand the ground access travel characteristics of air passengers to and from Logan Airport and to track historical trends of these characteristics, Massport administers an extensive triennial survey of air passengers. Since the late 1970s, the Logan Airport Air Passenger Ground Access Survey is one of Massport's primary tools for understanding ground access patterns and evaluating the effectiveness of its policies and services. The survey is also used to shape the direction of ongoing and new planning efforts to encourage Logan Airport travelers to use HOV/shared-ride modes instead of automobile modes. The survey is the principal means of measuring air passenger HOV mode share, which is reported in the [Logan Airport EDR/ESPR documents](#); a summary table is provided below.

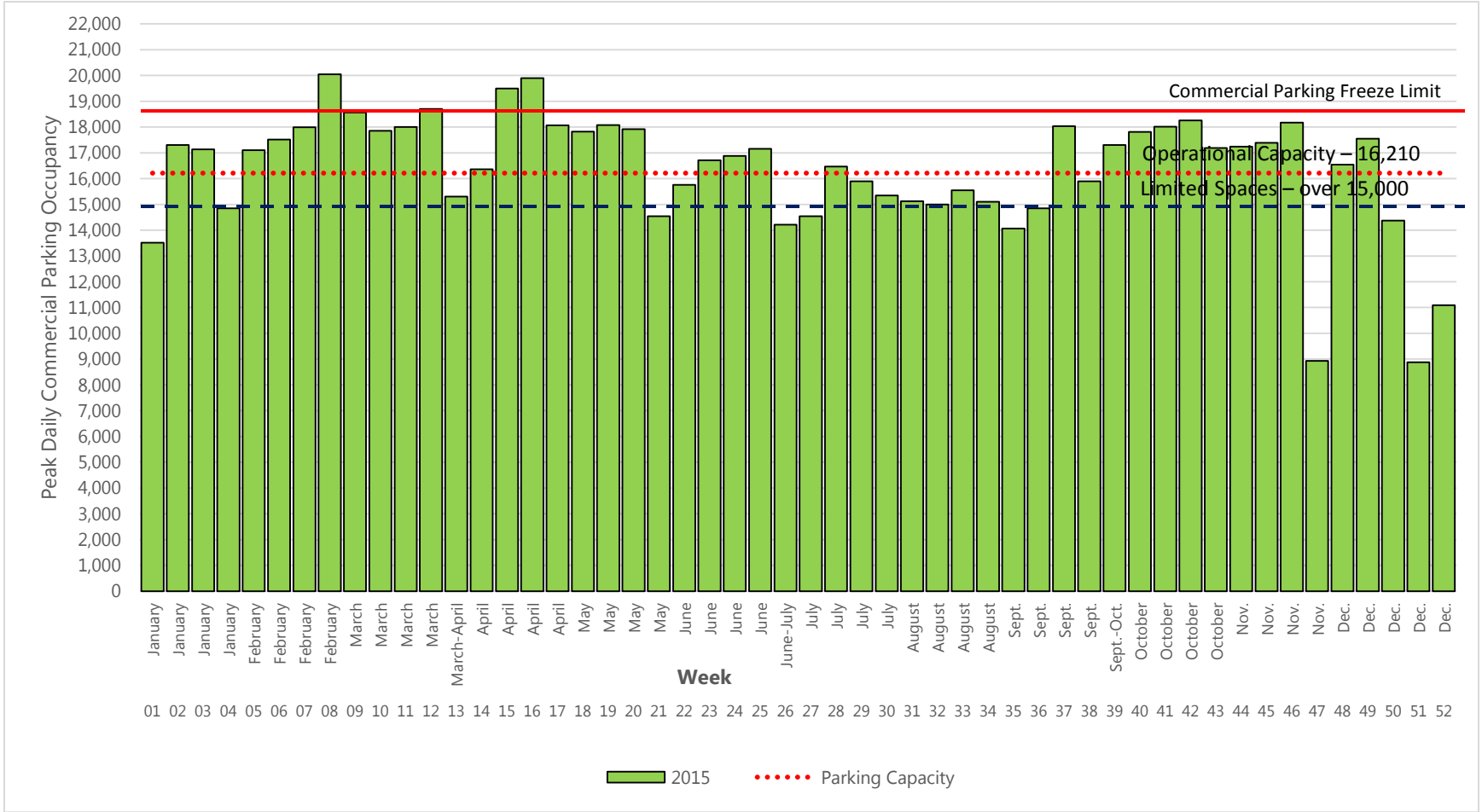
View the final report of the 2013 Logan Airport Air Passenger Ground Access Survey, which includes a description of the survey method, response rates, survey questionnaire, and results. (A copy of the previous survey report is available here: [2010 Logan Airport Air Passenger Ground Access Survey](#).)

A new survey is planned for the spring of 2016; the results from the survey are expected to be posted here in the winter of 2016/2017.

Ground Access Modes of Travel

The table below presents the air passenger ground access mode shares for survey years 2004 through 2013. Even with growth in air passengers, the HOV/shared-ride mode shares have remained relatively level. Logan Airport continues to be one of the airports with highest use of HOV/shared-ride modes in the U.S.

2) Information on scope of diverting cars to satellite locations on Logan property – Updated 2015



3) Information on the ridership for Logan Express buses by site – May 2015

Annual Logan Express Ridership by Site - 2015

| Existing Logan Express Sites/Services | | | | | |
|---------------------------------------|---|---|---|-------------------|------------|
| | Braintree | Framingham | Woburn | Peabody | Back Bay |
| Annual Passengers (CY 15) | 625,271 | 428,623 | 354,711 | 73,603 | 290,796 |
| Distance from Logan Airport | 14 miles | 22 miles | 15.5 miles | 14 miles | 5 miles |
| Operating assumptions | Parking available 30 minute headways | Parking available 30 minute headways | Parking available 30 minute headways | Parking available | No parking |

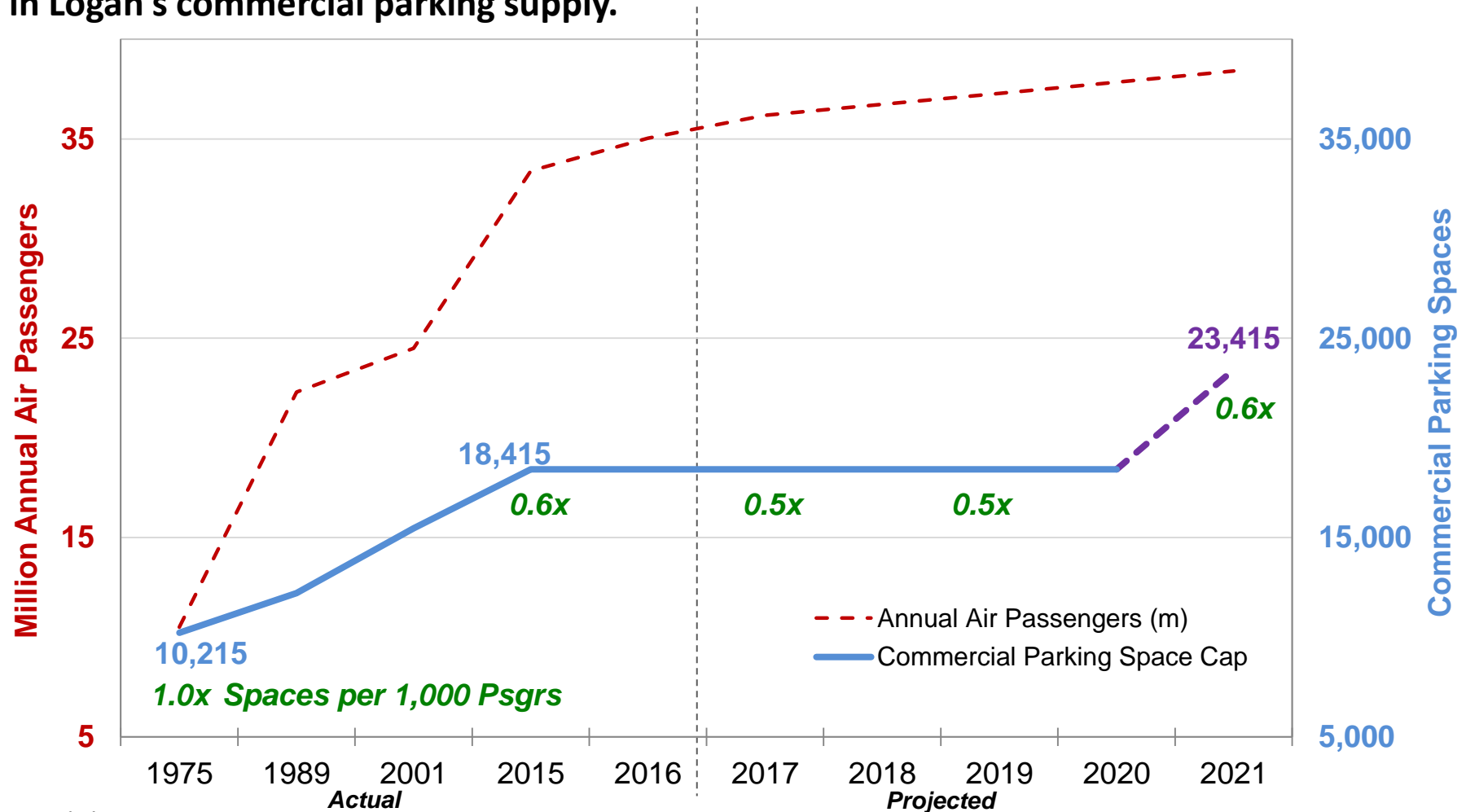
**4) REQUEST THAT MORE INFORMATION BE
GIVEN ON THE METHODOLOGY OF MASSPORT'S
TECHNICAL PAPER SUBMITTED TO DEP**

The Problem

- Parking is becoming more constrained, more often at the airport
 - In the short term, leads to lower customer service levels and operational challenges and costs
 - In the long term, leads to ground access behavior changes, shifting more people to drop-off/pick-up modes
- Problem is exacerbated by air passenger growth

Parking Capacity at Logan Airport Has Not Kept Pace with Passenger Growth

Since 1975, there has been a 220% increase in passengers, but only an 80% increase in Logan's commercial parking supply.



12/8/2016

Note: Forecast passengers are High scenario.

Massport's Trip Reduction Strategy Relies Heavily on HOV: Close to 30% HOV Use at Logan Due to Massport's Efforts and Investments, Ranks Top in the Country



Public Transportation – MBTA

- Blue Line Airport station
- Silver Line bus boardings – Free from Airport to South Station via South Boston Seaport



Logan Express

- Braintree - Purchased and renovated
- Framingham - Doubled supply with new garage
- Woburn & Peabody - Expanded service
- Back Bay Pilot - New service from Hynes / Copley



Bus Service

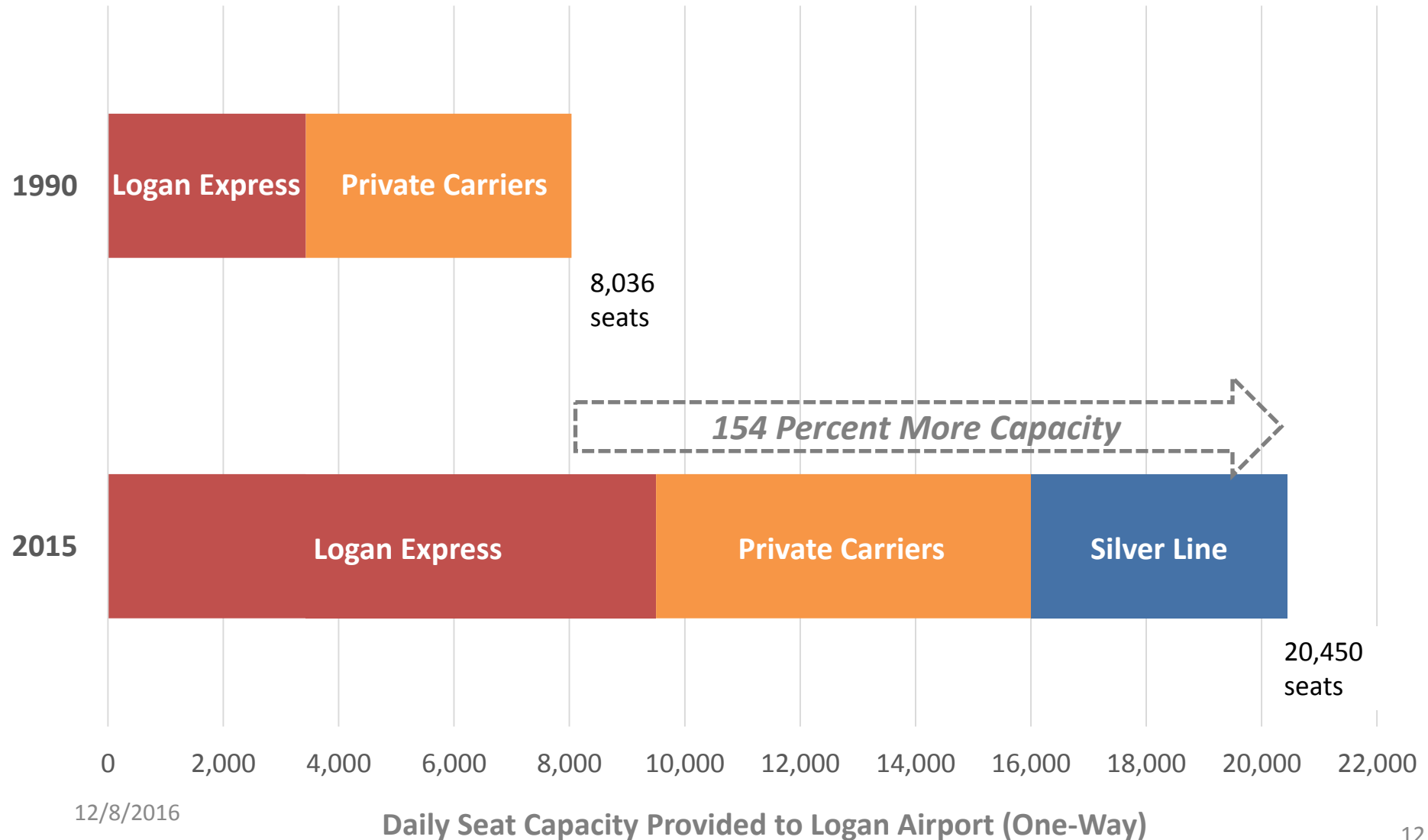
- Boston Bus Express
- C&J Bus Lines
- Peter Pan Bus
- Concord Coach Lines



HOV Lanes

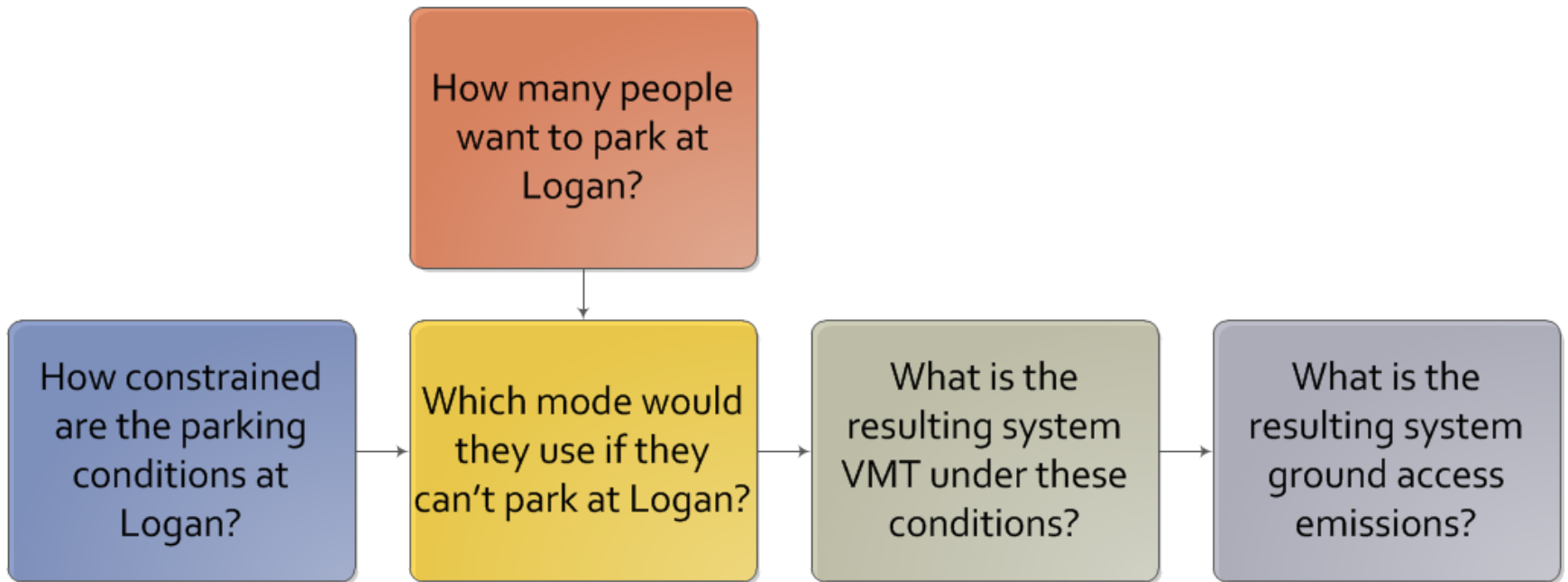
- Route 93

Scheduled HOV seats to the airport have increased 2.5x since 1990

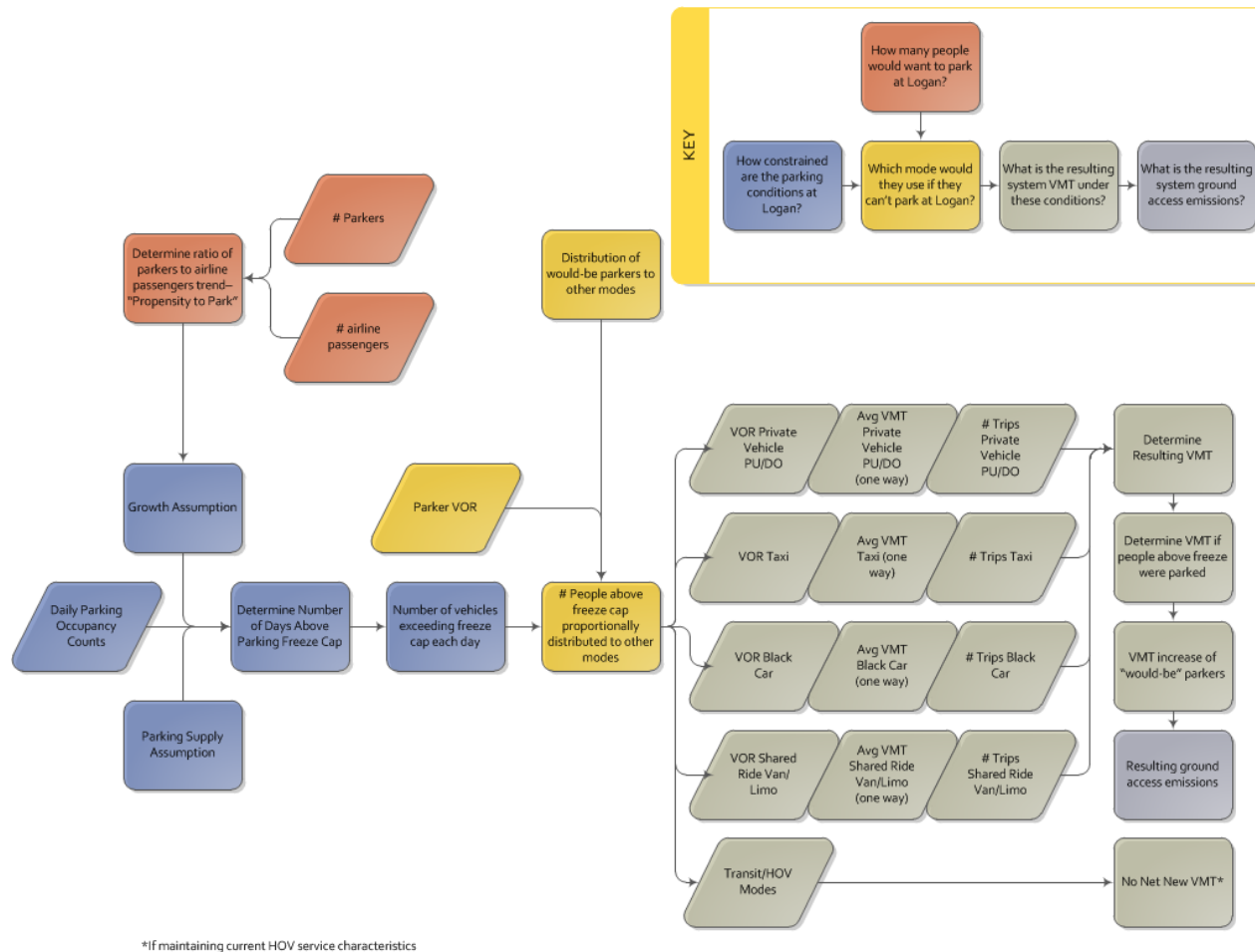


ANALYSIS APPROACH

Analysis Approach



Analysis Approach



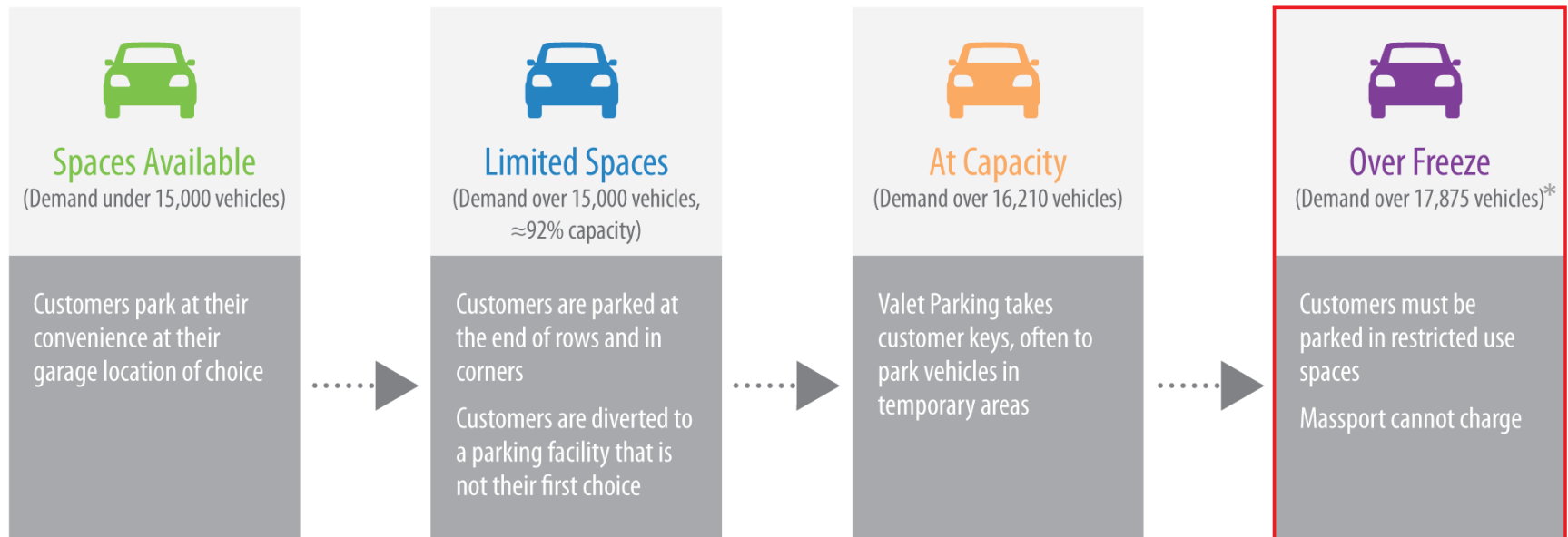
How do People Travel to Logan Airport?

| Ground Access Mode | 2007 | 2010 | 2013 |
|----------------------------------|--------------|--------------|--------------|
| <u>Non-HOV/Automobile</u> | | | |
| Private Automobile | 40.2% | 40.4% | 43.2% |
| Taxi | 19.7% | 18.8% | 18.6% |
| Rental car | 12.4% | 10.9% | 10.4% |
| Total Non-HOV Share | 72.3% | 70.1% | 72.2% |
| <u>HOV/Shared-Ride</u> | | | |
| Unscheduled HOV | 7.3% | 7.6% | 8.3% |
| Scheduled HOV | 6.9% | 8.2% | 6.9% |
| Transit | 6.7% | 7.6% | 7.6% |
| Courtesy Shuttle | 3.5% | 4.6% | 3.3% |
| Other | 3.4% | 1.8% | 1.7% |
| Total HOV Share | 27.8% | 29.9% | 27.8% |

Source: Logan Air Passengers Surveys - <https://www.massport.com/environment/environmental-reporting/air-passenger-survey/>

Airport Parking Conditions

Parking Demand Above Capacity Lowers Customer Service Level and Increases Operating Costs

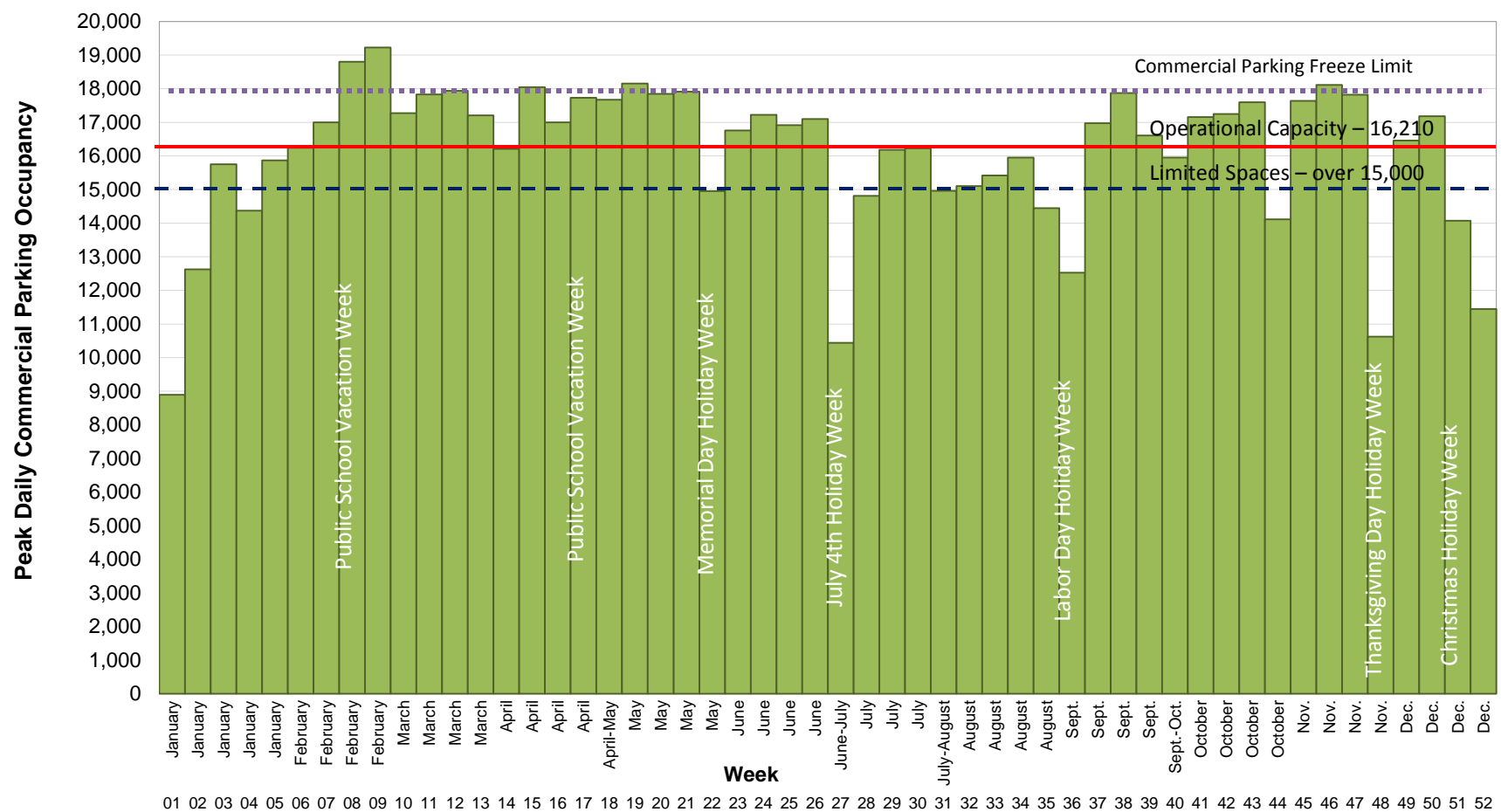


Commercial Parking in 2014

| | |
|--|--------|
| Commercial Parking Spaces (Air Passenger) | 17,875 |
| Commercial Parking Spaces (General Aviation and Hotel) | 540 |
| Employee Spaces | 2,673 |
| Total Parking Freeze Spaces | 21,088 |

Airport Parking Conditions

Commercial Parking: Weekly Peak Daily Occupancy, 2014

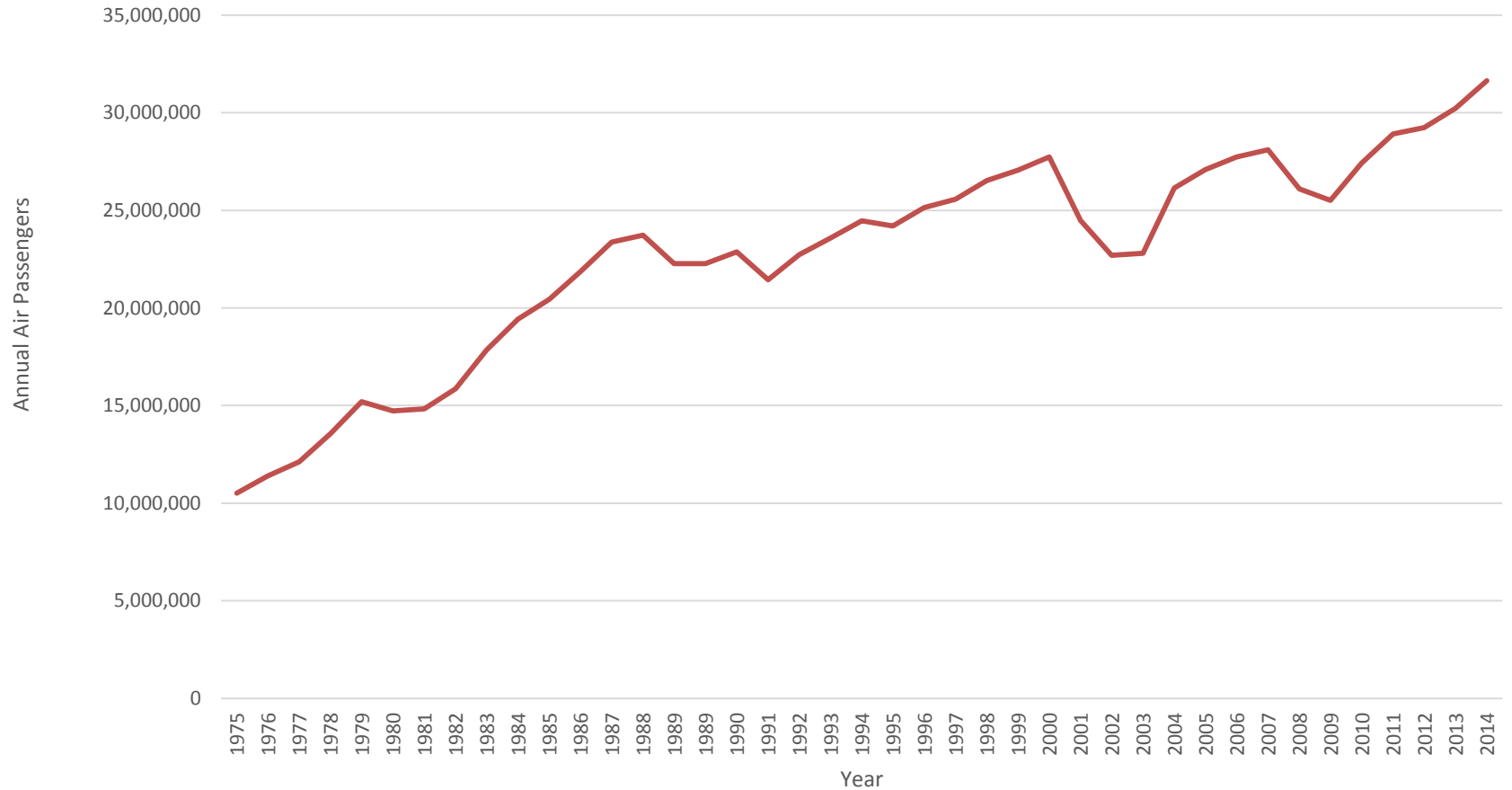


Source: 2014 EDR, Massport

How Constrained Are the Parking Conditions at Logan Airport?

- Two major factors contribute to the increased parking constraint
 - Air passenger growth
 - Duration each car is parked

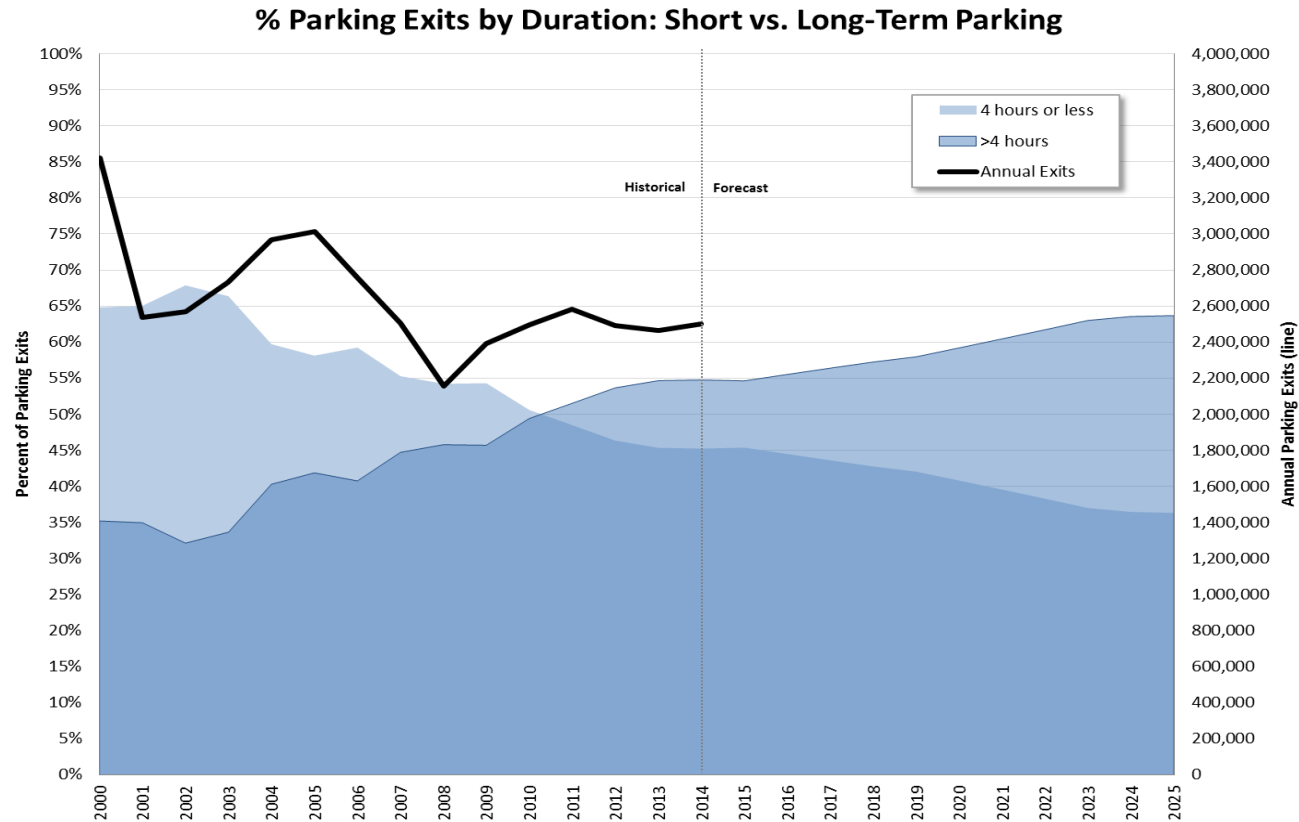
Air Passenger Growth Since 1975



Parking Duration Trends

Number of long-term (>4 hours) parkers parking hours is increasing while number of short-term parkers is decreasing

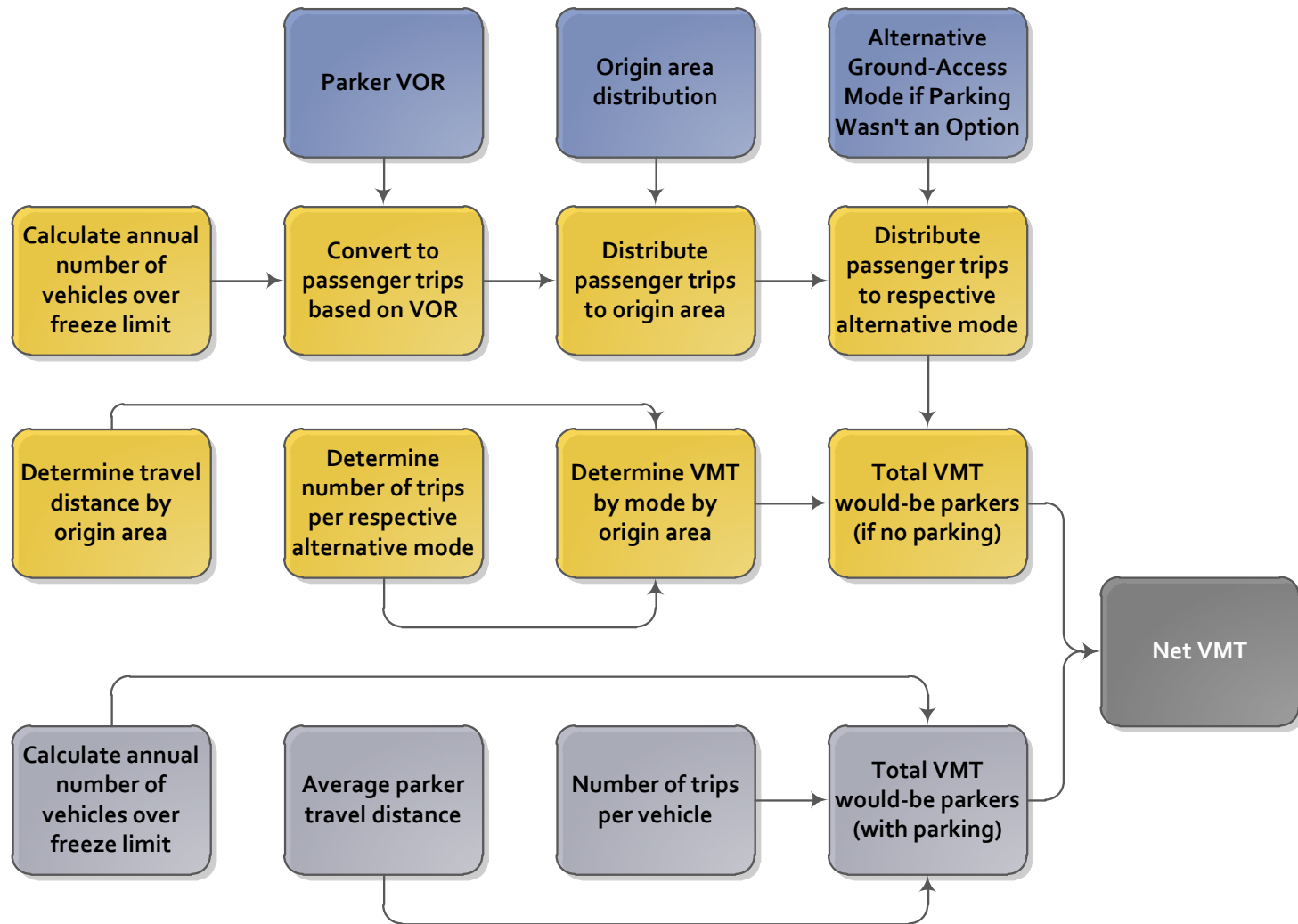
Results in fewer parking spaces per parker



Overall Approach

- Determine the annual number of vehicles unable to park on-airport given the parking freeze cap (“would-be parkers”)
- Distribute would-be parking air passengers to alternative ground-access modes
- Calculate the VMT of the alternative mode used
- Compare the VMT of the alternative mode with the VMT if they were able to park on-Airport

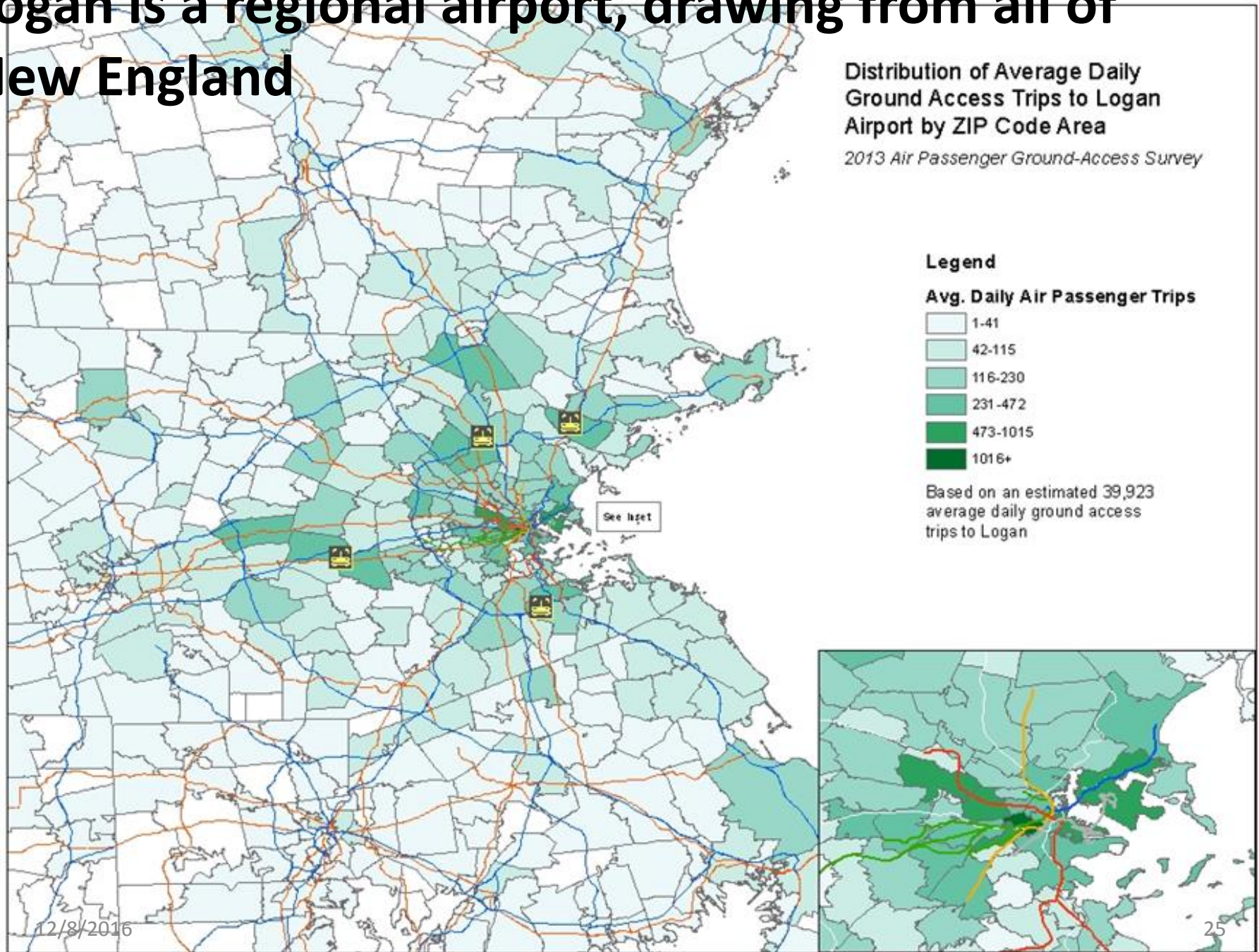
Overall Approach



Analysis – Key Concepts

| Input | Definition |
|--|--|
| Origin Area | Where an air passenger starts ground-access trip to Logan Airport |
| Vehicle Miles Traveled (VMT) | Miles traveled by vehicles in a specified region for a specified time period |
| Vehicle Occupancy Rate (VOR) | Number of air passengers in vehicle, by mode. |
| Average number of vehicle trips, by mode | Total number of one way trips to transport air passenger(s) to and from airport. |

Logan is a regional airport, drawing from all of New England



Logan Air Passenger Distribution of Origin

How people get to the airport varies based on where they originate from and on several other factors including convenience, cost, and access to various transportation modes

| Area of Origin | % of Parkers Arriving to Logan from Area |
|--|--|
| Urban Core (defined as Boston, Brookline, Cambridge, and Somerville) | 12% |
| Between Urban Core and Route 128 | 19% |
| Between Route 128 and I-495 | 36% |
| Outside of I-495, within Massachusetts | 17% |
| Outside of Massachusetts | 16% |
| Total | 100% |

Source: Massport 2013 Logan Airport Air Passenger Ground Access Survey

Alternative Ground-Access Mode if Parking Wasn't an Option

| Alternative Mode to Parking | Origin | | | | | | |
|------------------------------------|------------|----------------------------------|-----------------------------|--------------------------|---------------|-------------------------------------|------------------------|
| | Urban Core | Between Urban Core and Route 128 | Between Route 128 and I-495 | Outside I-495, within MA | Outside of MA | Overall Distribution to other Modes | |
| Drop-off by Private Vehicle | 16% | 27% | 31% | 38% | 44% | 32% | Curbside Drop off Mode |
| Drop-off by Taxi | 59% | 40% | 9% | 3% | 5% | 20% | |
| Drop-off by Black Car Limo | 9% | 19% | 39% | 25% | 7% | 24% | |
| Shared Ride Van/Other Limo Service | 0% | 2% | 1% | 12% | 4% | 3% | HOV/ Shared-ride Mode |
| HOV/Transit | 16% | 10% | 17% | 20% | 30% | 18% | |

Source: Massport 2013 Logan Airport Air Passenger Ground Access Survey

Note: Column "Overall Distribution to other Modes" does not total 100 percent. The remaining 3 percent did not respond or responded with a mode other than the modes presented.

Over 3 of 4 parkers said they would shift to drop-off/pick-up modes if parking was not available

- EPA Approval of SIP Amendment (1993):

“The existing parking freeze has had the unanticipated effect of vastly increasing passenger drop off and pick up, resulting in twice as many vehicle trips as would occur if each passenger drove to the airport.

The increase of 2,000 commercial spaces at the airport, coupled with the program for exchanging employee spaces for commercial spaces and with continuing improvements in alternate means of access to the airport, should lessen the drop-off/pick-up phenomenon.”



VS.



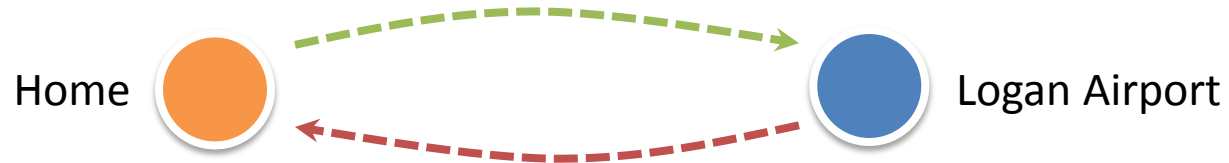
According to studies,
over **75% of passengers**
would opt for pick-up
drop-off if they cannot
find parking.

THE IMPACT

Drop-off/Pick-up modes can generate twice as many vehicle trips as long-term parking



Long-Term Parking



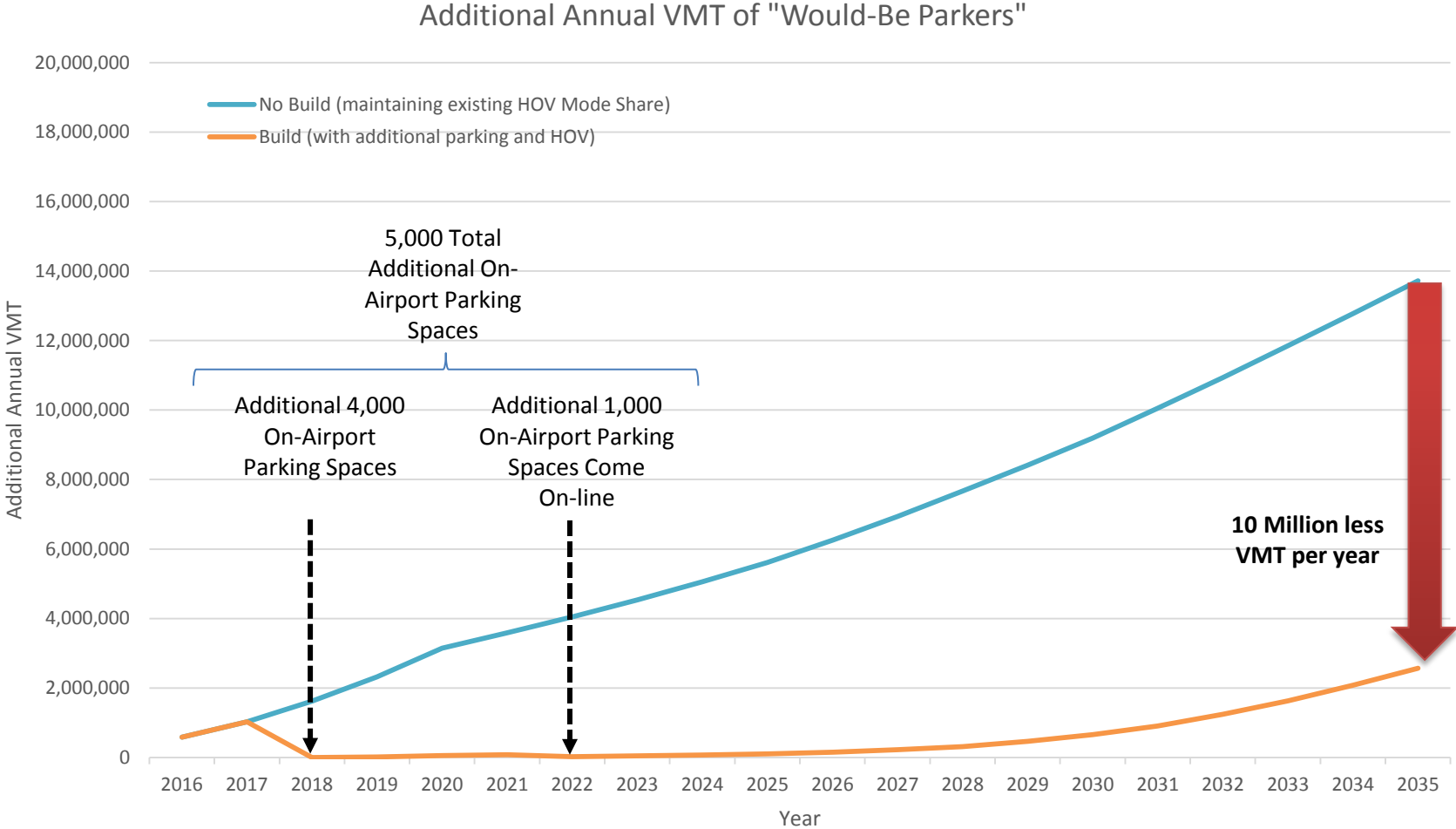
Taxi



Pick-Up/Drop-Off



Resultant Annual Net VMT Increase of Would-Be Parkers



**5) REQUEST THAT MORE INFORMATION BE GIVEN
ON WHY MASSPORT IS REQUESTING 5,000 SPACES**

Criteria Massport used to confirm the need for 5,000 Parking Spaces at Logan Airport

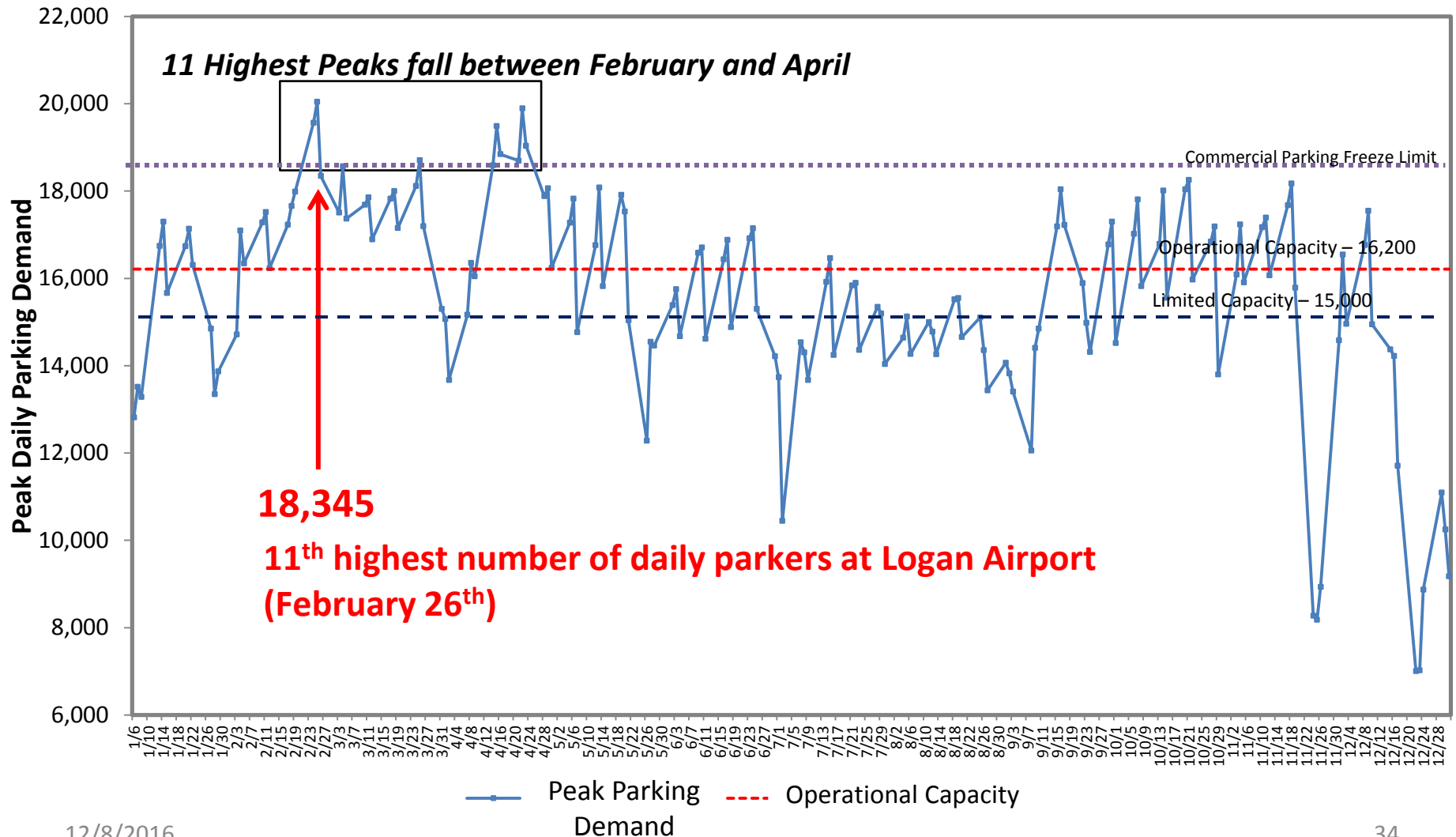
Criterion # 1. Existing Peak period parking demand at Logan Airport

- Industry standard: 11th highest peak daily parking demand

Criterion # 2. Passenger growth trends

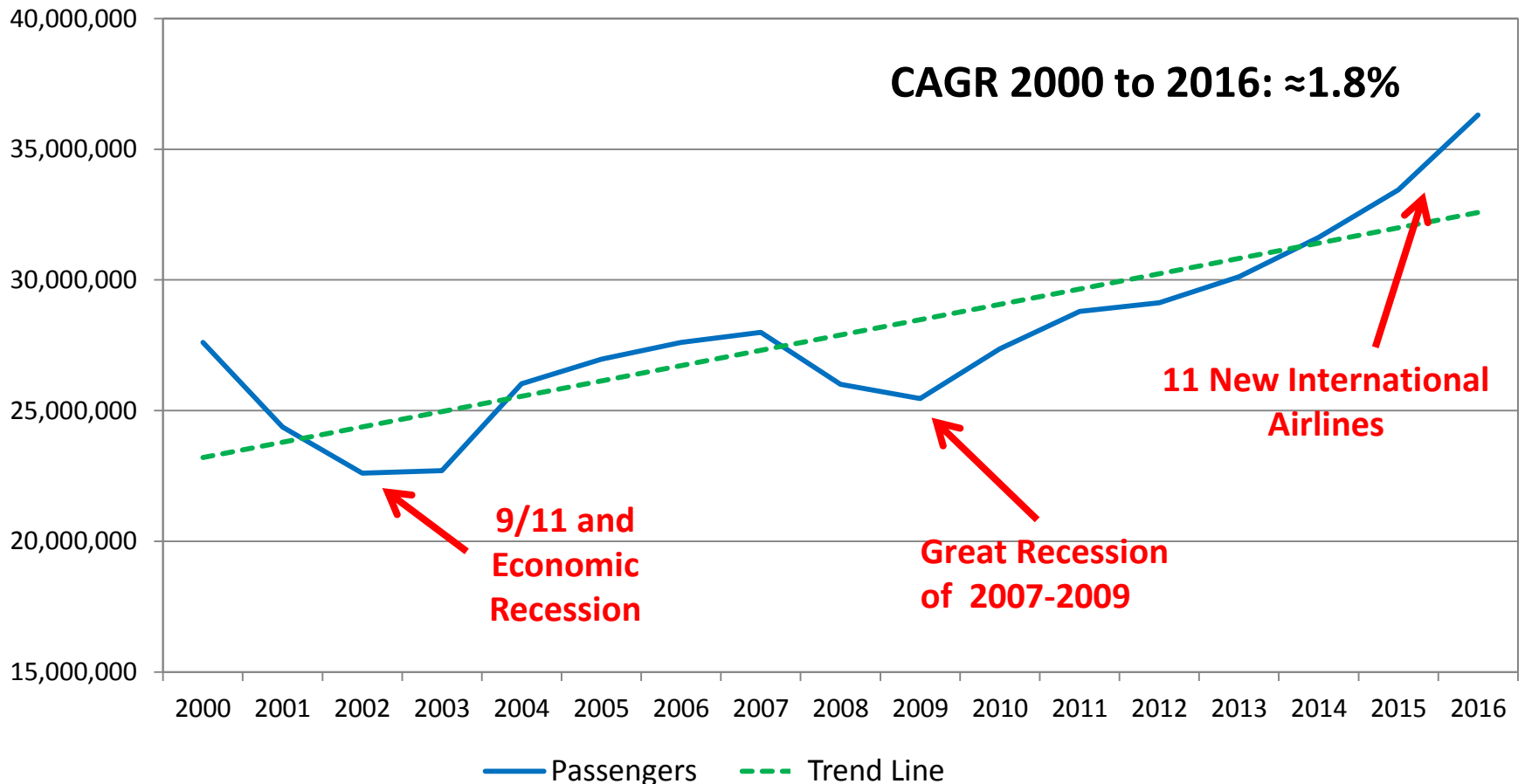
Criterion # 3. Propensity to park trends

During February School Vacation Week

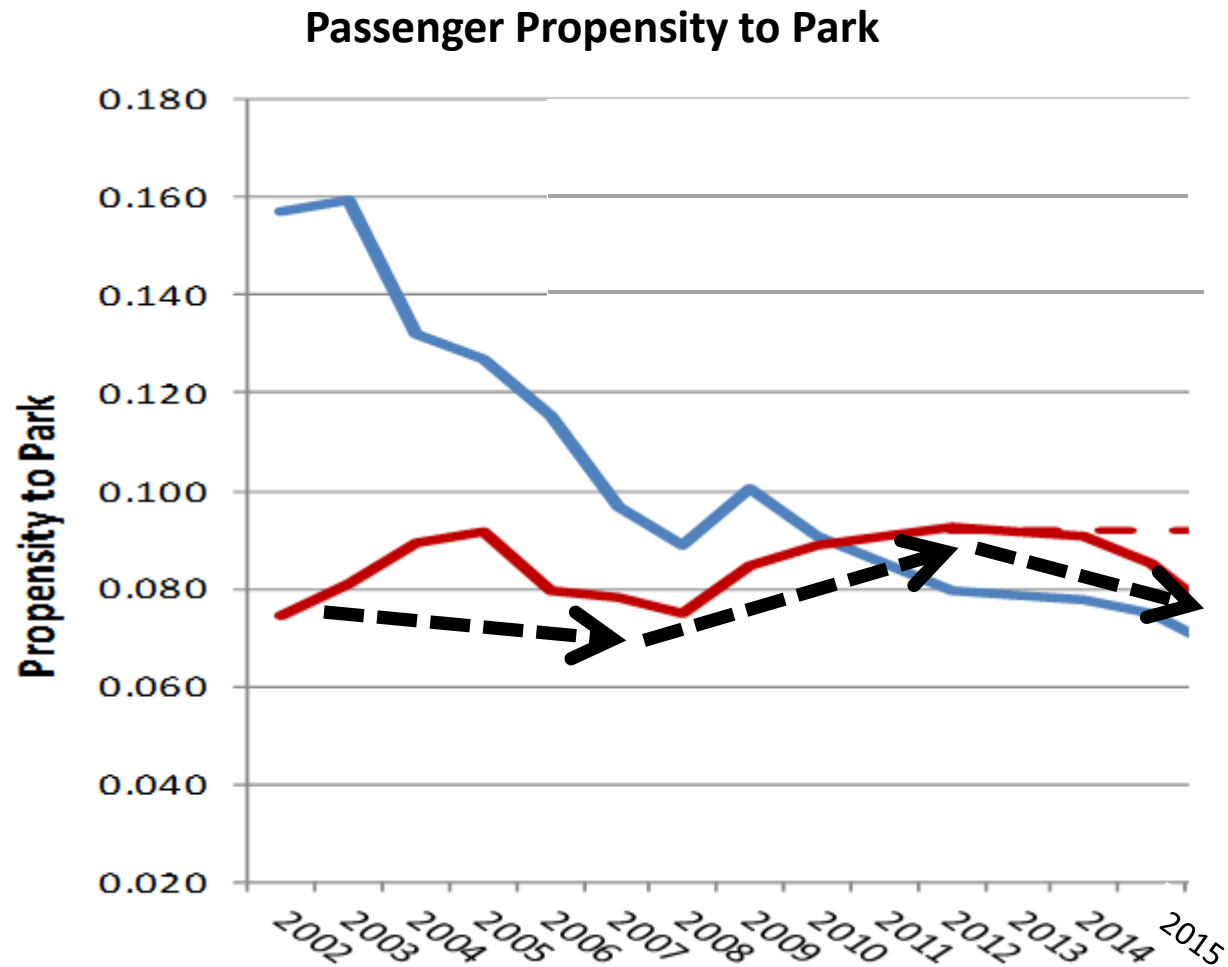


Criterion # 2. Logan Airport's Long Term Passenger Growth Rate $\approx 1.8\%$ Per Year

Logan Passengers



Criterion # 3. Logan Passenger Parking Trends (Propensity to Park)

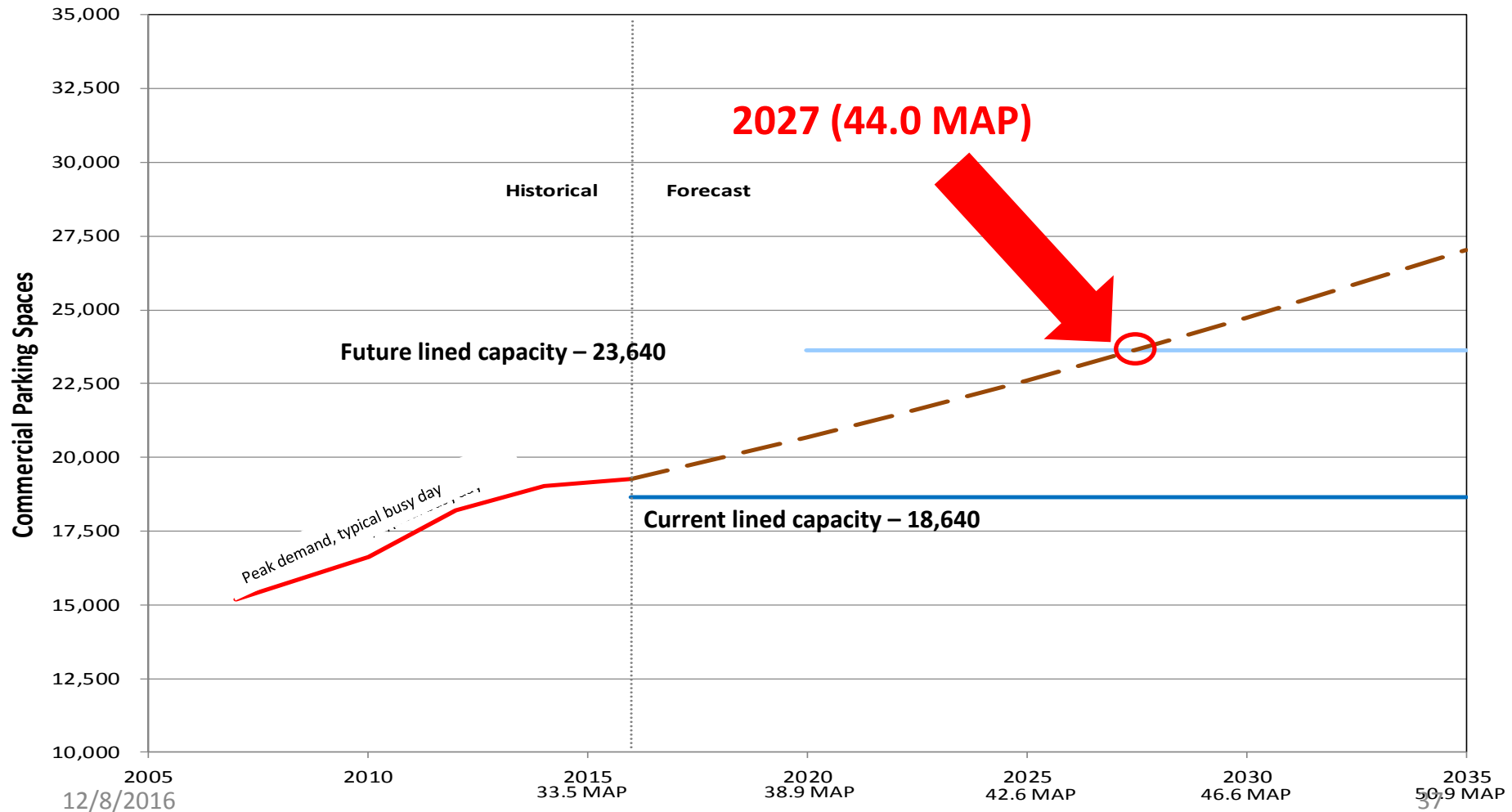


2013 Passenger survey

- 1 out of 8 passengers parks according to 2013 survey

Using these criteria, Massport estimates 5,000 new Parking Spaces are needed to Accommodate Parking Demand Until 2027

- Peak demand reaches capacity in 2027 at 44 MAP

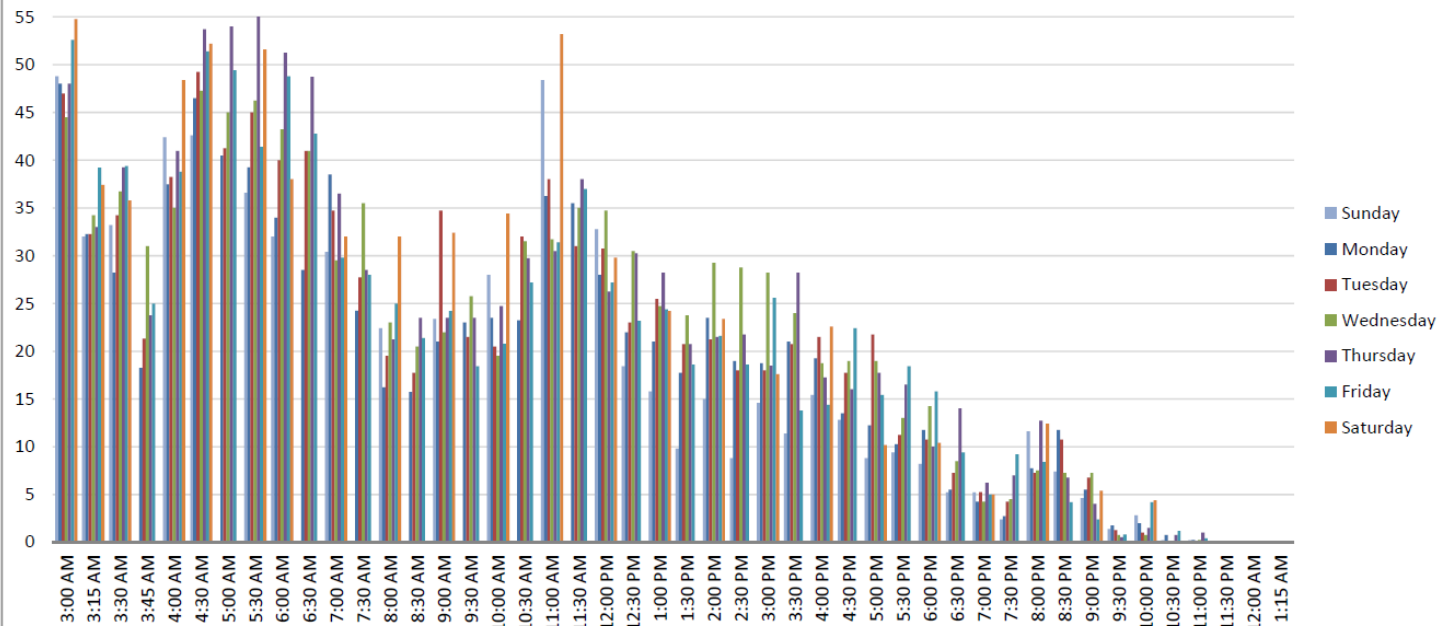


Conclusion

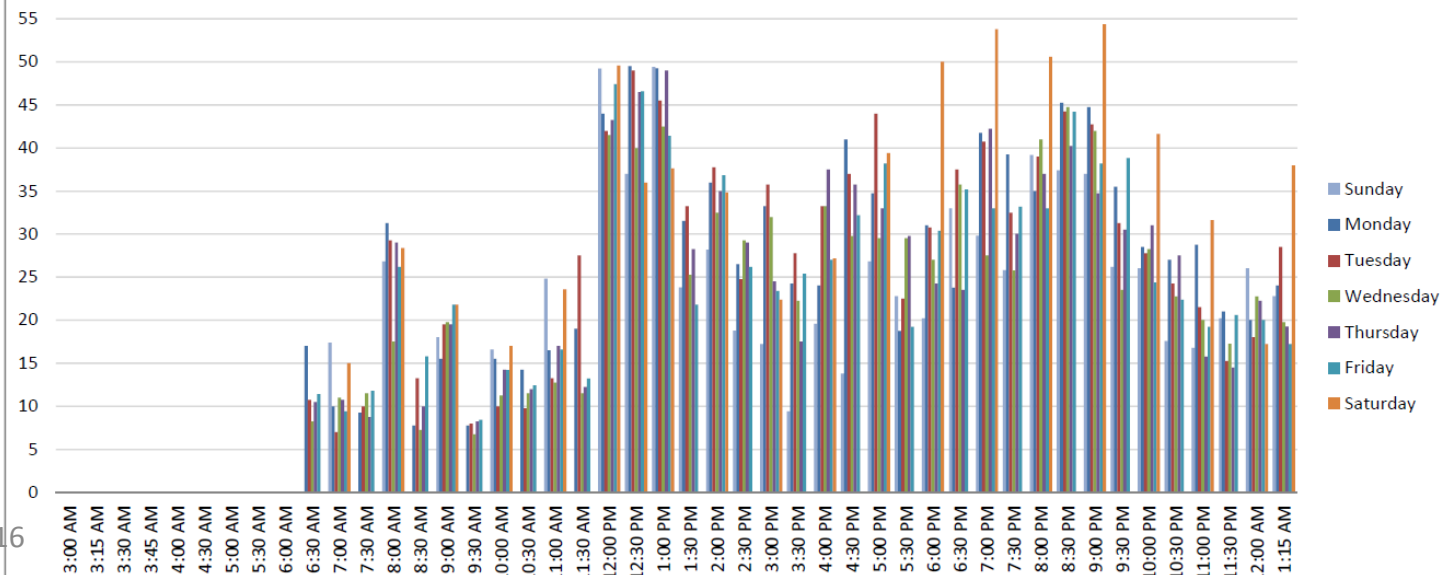
- Limiting parking supply at Logan under the Logan Parking Freeze, is increasing the use of ground-access vehicle modes, such as drop-off/pick-up private vehicles and taxis, which generally have a higher intensity of vehicle miles traveled.
 - The Logan Airport Parking Freeze is causing an increase in overall Airport ground access vehicle miles traveled (VMT) and emissions.
- Resulting increases in VMT and emissions will increase as air passenger activity increases at Logan Airport.

Questions

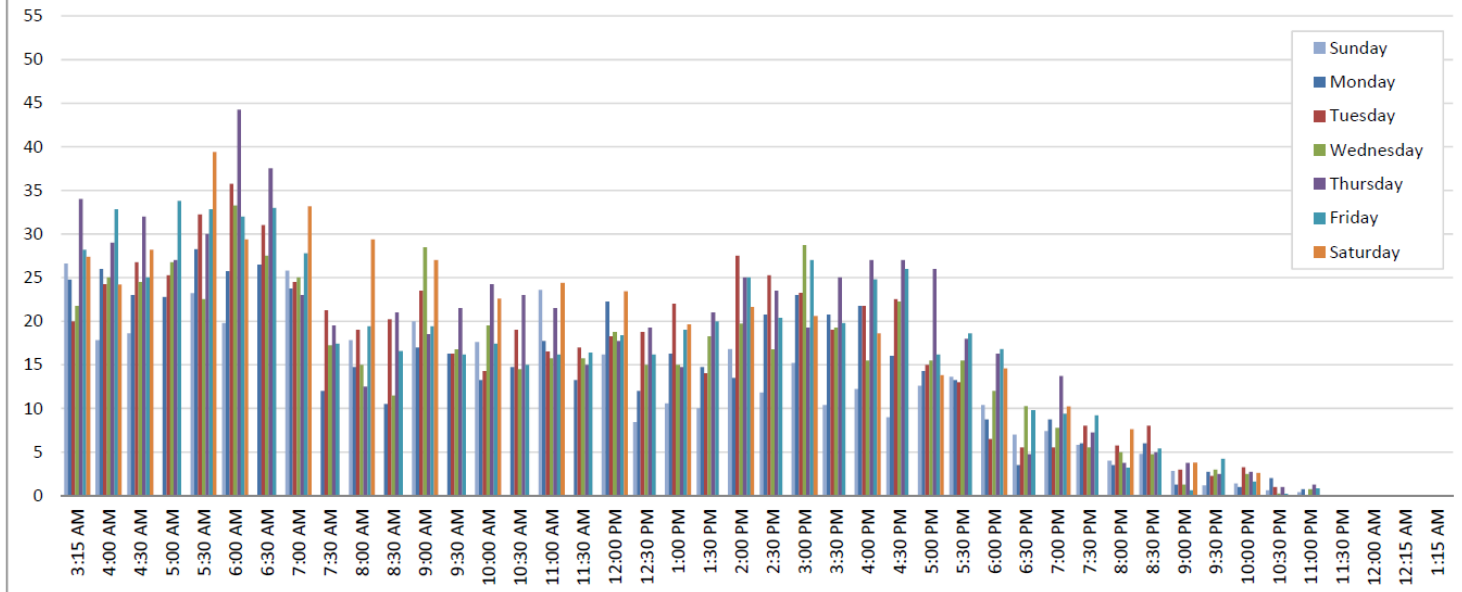
BRAINTREE LEX: Avg. PAX per Trip by Day of Week *TO* Logan, May 2015



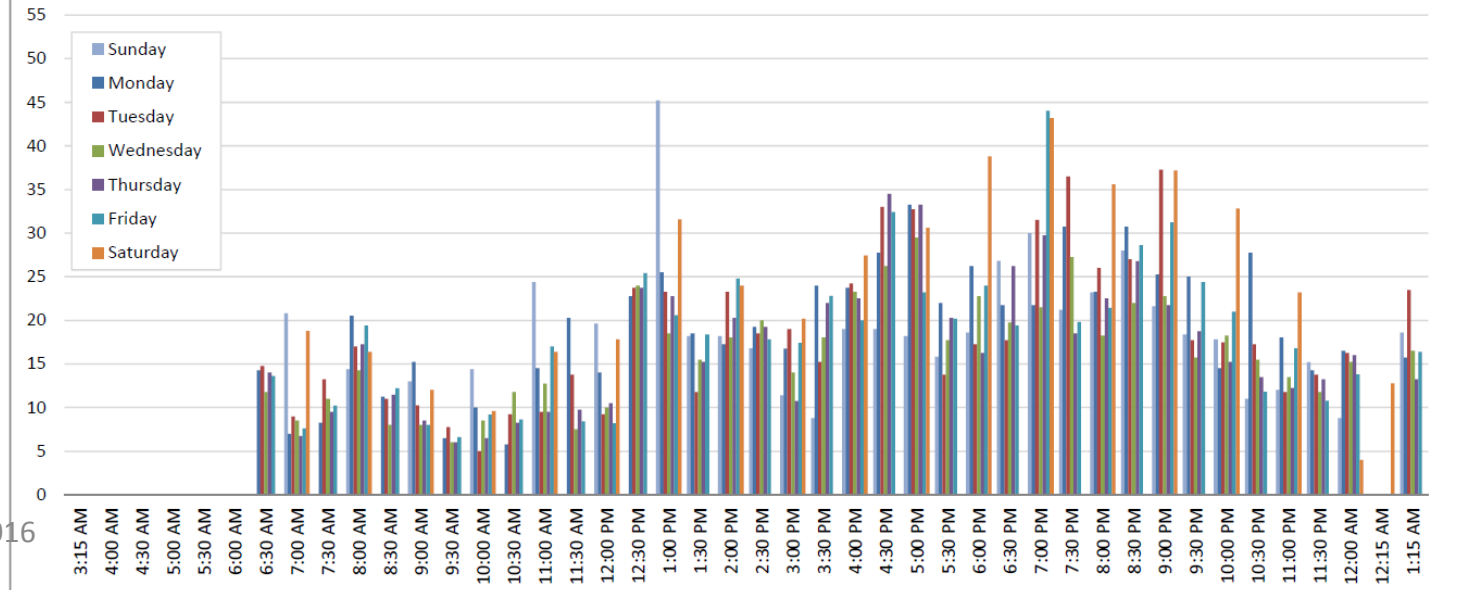
BRAINTREE LEX: Avg. PAX per Trip by Day of Week *FROM* Logan, May 2015



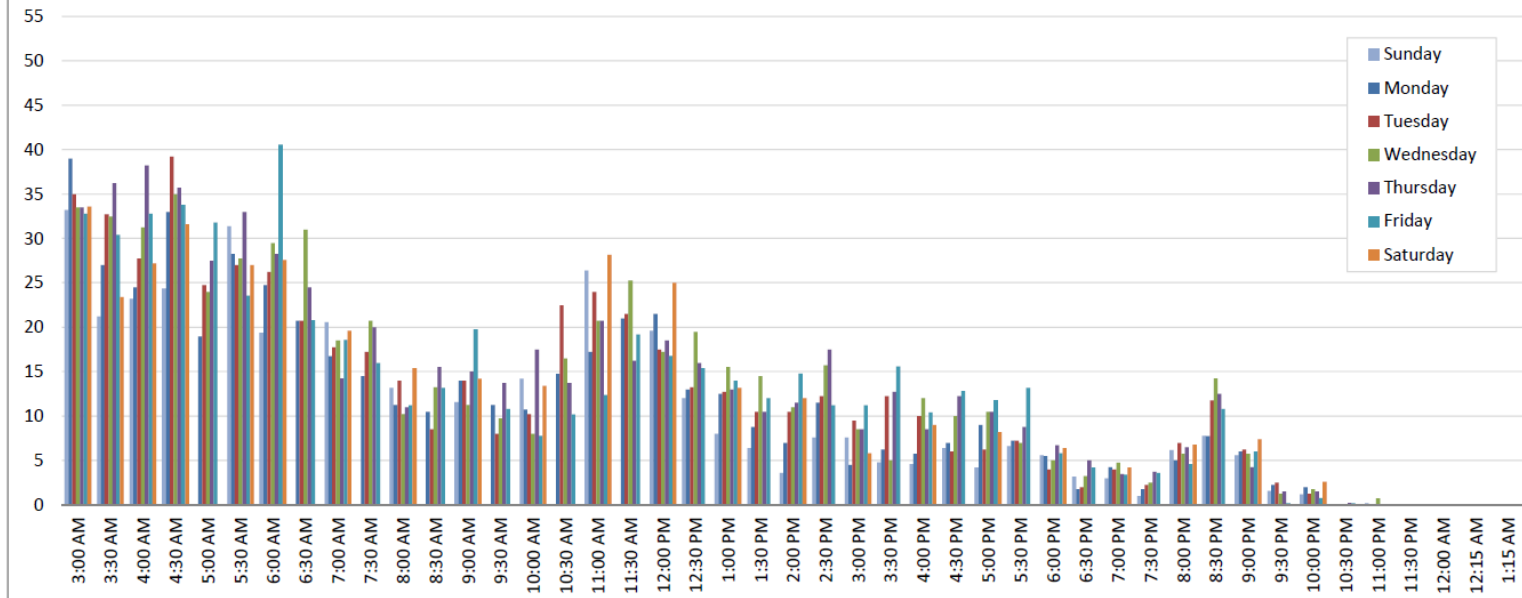
**FRAMINGHAM LEX: Avg. PAX per Trip by Day of Week *TO* Logan,
May 2015**



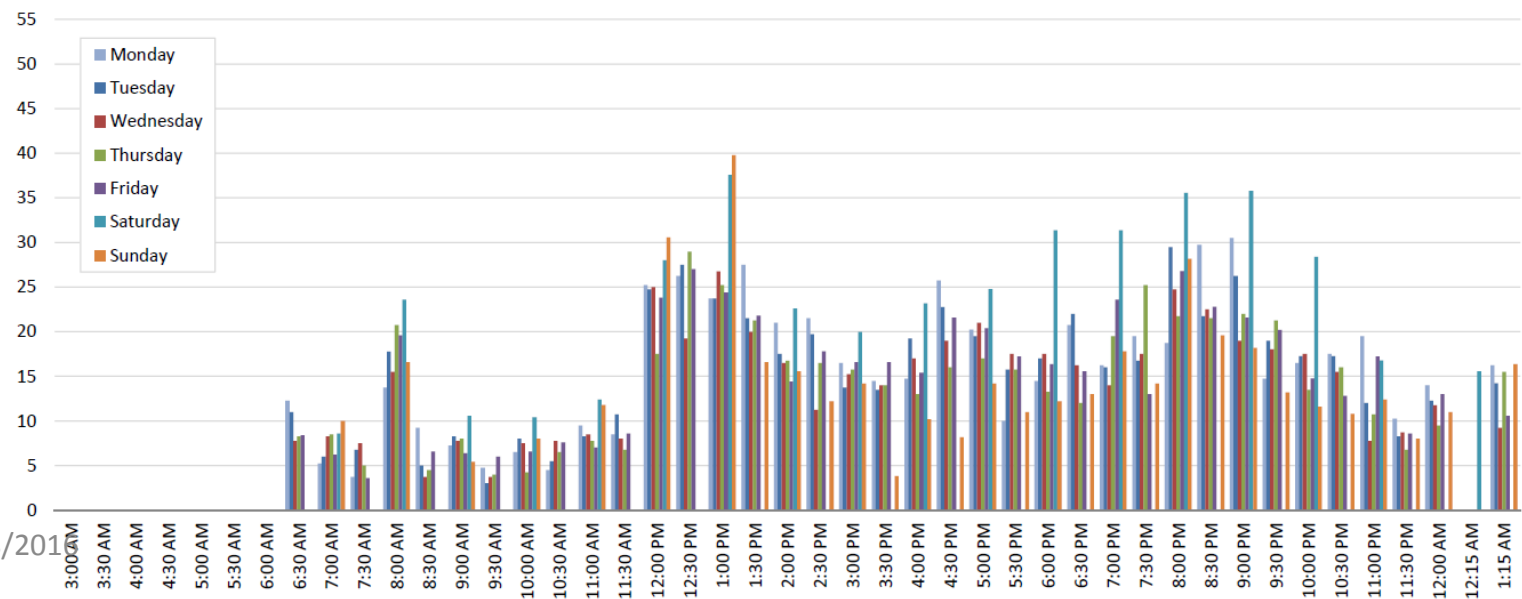
**FRAMINGHAM LEX: Avg. PAX per Trip by Day of Week *FROM* Logan,
May 2015**



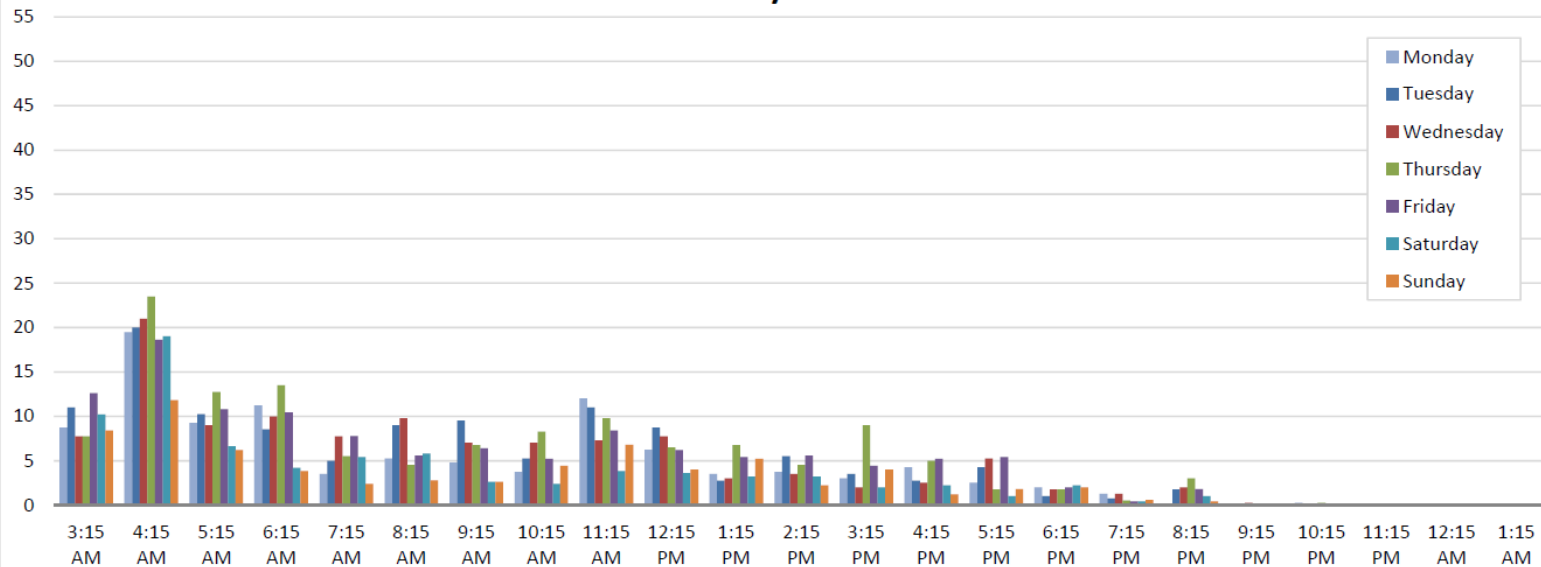
**WOBURN LEX: Avg. PAX per Trip by Day of Week *TO* Logan,
May 2015**



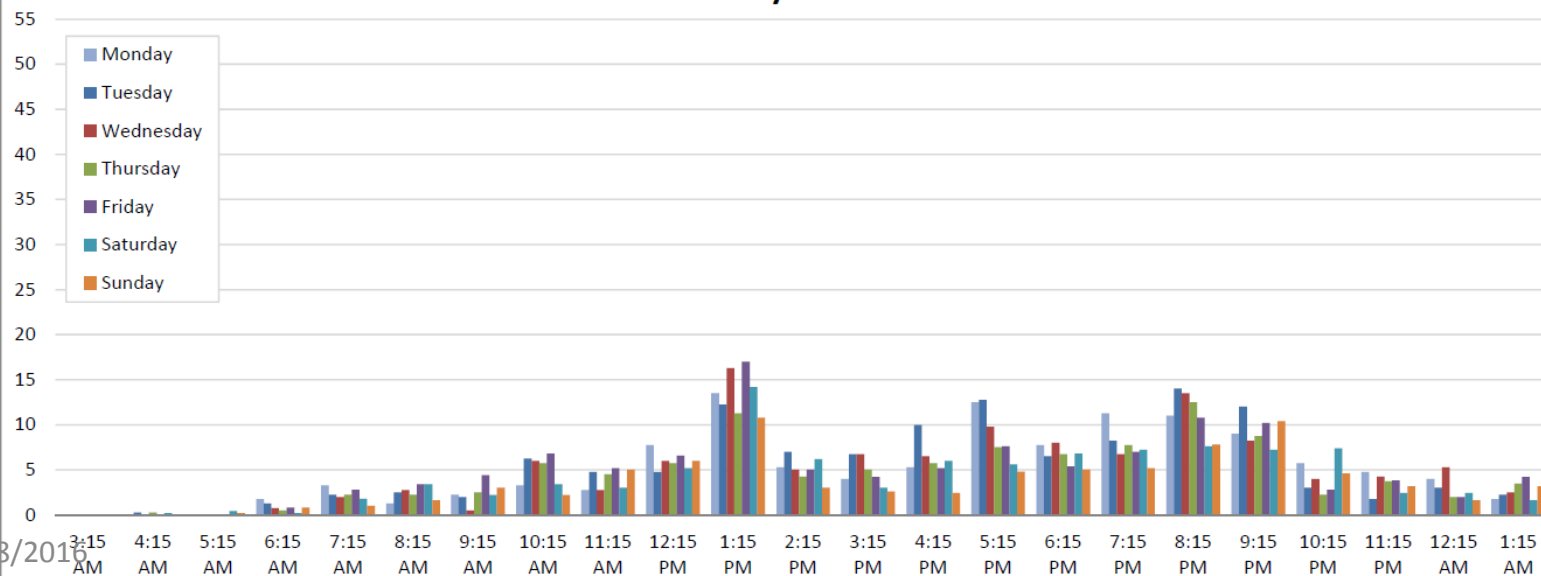
**WOBURN LEX: Avg. PAX per Trip by Day of Week *FROM* Logan,
May 2015**



**PEABODY LEX: Avg. PAX per Trip by Day of Week *TO* Logan,
May 2015**



**PEABODY LEX: Avg. PAX per Trip by Day of Week *FROM* Logan,
May 2015**



Distance from Origin Area

| Area of Origin | Average Distance to/from Airport [miles, one way] |
|--|--|
| Urban Core | 7.4 |
| Between Urban Core and Route 128 | 12.2 |
| Between Route 128 and I-495 | 24.5 |
| Outside of I-495, within Massachusetts | 49.2 |
| Outside of Massachusetts | 53.6 |

Source: Massport 2013 Logan Airport Air Passenger Ground Access Survey

Vehicle Occupancy Rate

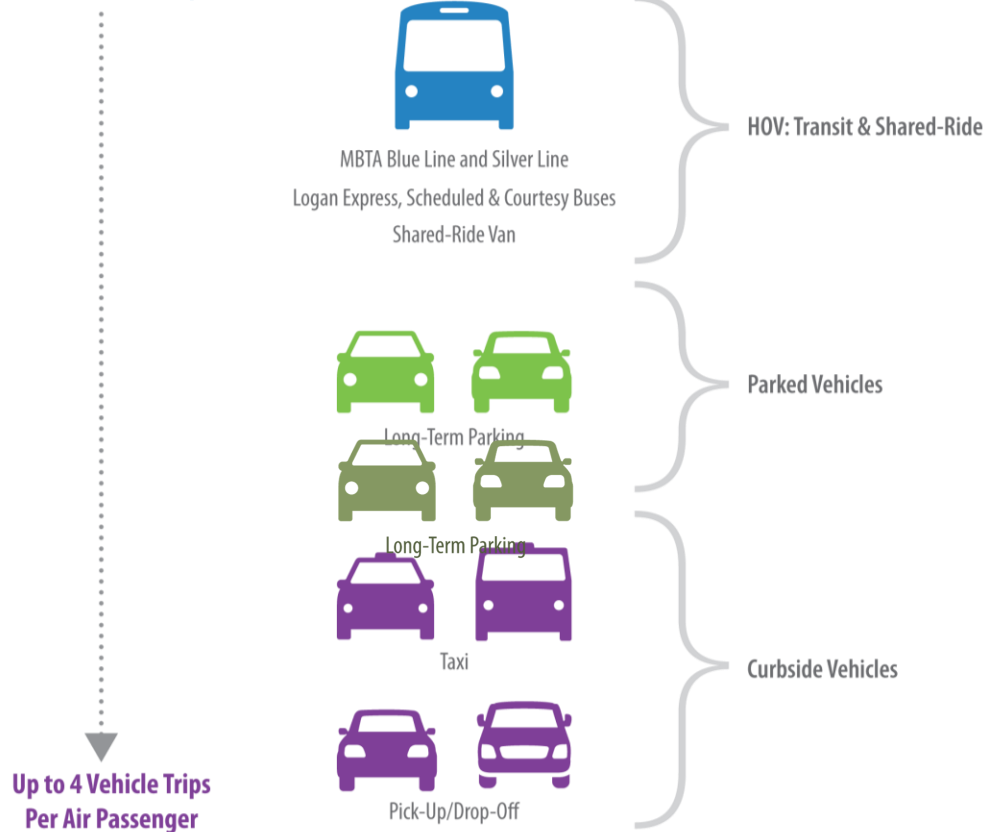
Number of air passengers arriving in each vehicle, by mode

| Mode | VOR |
|----------------------|------|
| Parker | 2.17 |
| Drop-off/Pick-up | 2.42 |
| Taxi | 1.80 |
| Black Car | 2.10 |
| Shared Ride Van/Limo | 3.50 |

Source: Massport 2013 Logan Airport Air Passenger Ground Access Survey

Drop-off/Pick-up modes generate more vehicle trips than long-term parking and HOV modes

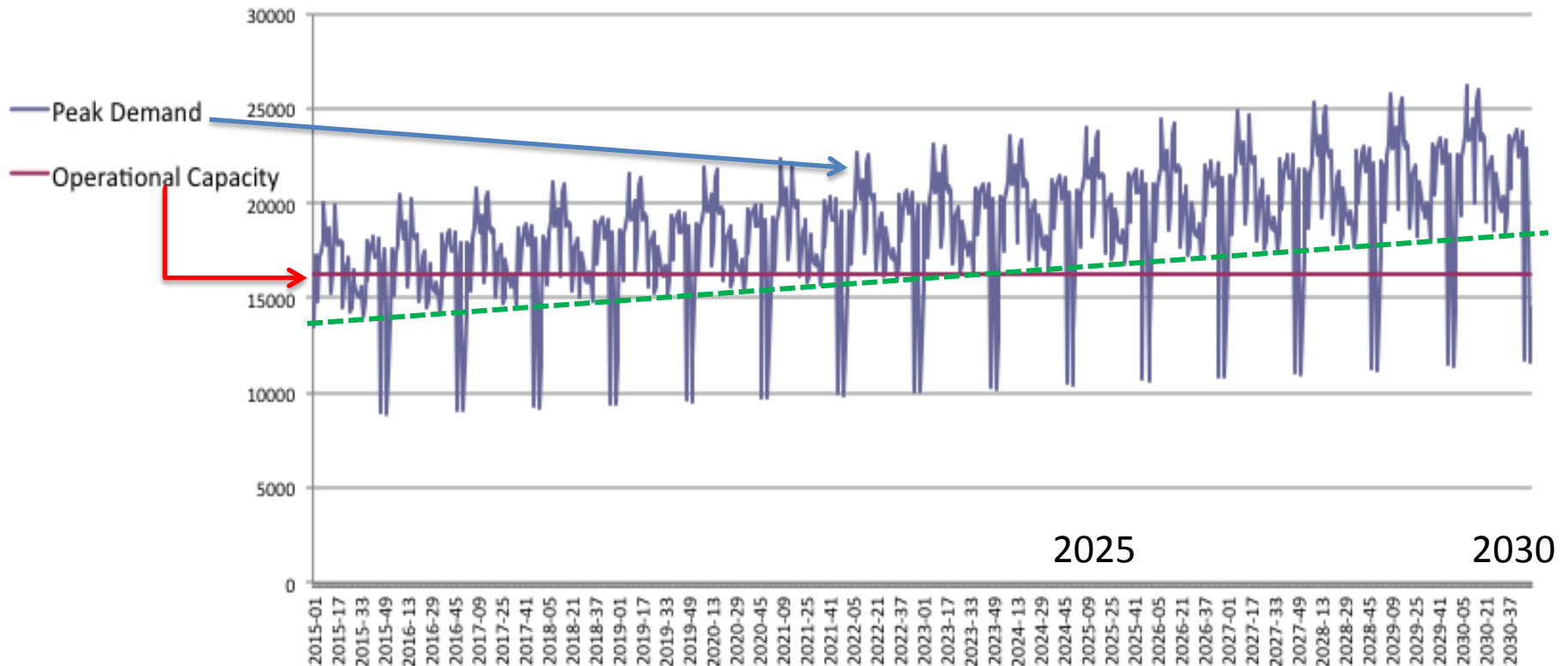
Fewest Vehicle Trips



| Mode | # of Trips |
|----------------------------------|------------|
| Parker | 2.00 |
| Taxi | 3.12 |
| Shared Ride Van/Limo | 3.12 |
| Black Car | 3.72 |
| Private Vehicle Drop-off/Pick-up | 4.00 |

What would a “no build” scenario look like over time?












Logan Parking: Baseline Forecasted Peak Weekly Volumes Above Operational Capacity



At 1.8% growth

12/8/2016

Factors Influencing Air Travel and Propensity to Park

| Lever | Parking | Passengers |
|--|---|---|
| International routes and LCCs |  |  |
| Press on problem: rate increases, increase HOV capacity; LEX promotion |  | |
| Low unemployment rate; diverse economy; strong global economy | |  |
| Recession | |  |
| Terrorism | |  |
| Customer service: TSA and CBP | |  |
| Jet Fuel Price | |  |
| Airlines: increase in seats and destinations (JetBlue and Delta) | |  |
| Technology: Autonomous vehicles, Next Gen |  |  |

Origin Affects Mode Choice

Logan is a regional airport, drawing from all around New England, often from areas not serviced by robust HOV services

